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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,950	10/27/2003	Kentaro Fujino	244405US0X	2139
22850	7590	09/10/2007	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			KNABLE, GEOFFREY L	
			ART UNIT	PAPER NUMBER
			1733	
			NOTIFICATION DATE	DELIVERY MODE
			09/10/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

Application No.

10/692,950

Applicant(s)

FUJINO ET AL.

Examiner

Geoffrey L. Knable

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3-11 and 14-18 is/are pending in the application.
- 4a) Of the above claim(s) 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-10 and 14-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

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1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claim 11 remains withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the election requirement in the reply filed on 4-24-2006.
3. Claims 6-10, 14 and 16-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 6, no antecedent has been established for "the layer of..." Likewise, in claim 7, no antecedent has been established for "the layer of.."

4. Receipt is acknowledged of the evidence showing a Joint Research Agreement and terminal disclaimer over copending Application No. 10/477,710. This however would not appear sufficient at present to overcome the double patenting rejection as the terminal disclaimer does not include the provision required by 37 CFR 1.321(d)(3). The double patenting rejections are thus repeated below (and new prior art rejections are also added in view of newly discovered/applied prior art).

5. Claims 1, 3-8 and 14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over at least claims 1-14, 30, 33, 42 and 44 of copending Application No. 10/477,710. Although the conflicting claims are not identical, they are not patentably distinct from each other for the reasons set forth in the last office action.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

6. Claims 9, 10, and 15-17 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over at least claims 1-14, 30, 33, 42 and 44 of copending Application No. 10/477,710 in view of Lin et al. (US 5,292,590) as applied in the last office action.

This is a provisional obviousness-type double patenting rejection.

7. Claim 18 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over at least claims 1-14, 30, 33, 42 and 44 of copending Application No. 10/477,710 in view of Lin et al. (US 5,292,590) as applied above and further in view of at least one of [Liu et al. (US 5,280,817) and Weston et al. (US 5,879,488)].

These secondary references are substantively applied for the same reasons as set forth in the last office action.

This is a provisional obviousness-type double patenting rejection.

8. Claims 1 and 3-8 are rejected under 35 U.S.C. 102(a/e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tsai et al. (US 6,479,160 - newly cited) or JP 63-8448 (of record).

Tsai et al. discloses a high oxygen barrier film material formed by reacting EVOH having preferably 25-50 mol % ethylene (col. 6, lines 16-21) with 1-10% of an epoxy functionalized polydiene (col. 6, line 65 - col. 7, line 43), this reading on the broadly claimed "epoxy compound". Although the reference does not describe "an innerliner for

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pneumatic tires", it is not seen that this clearly defines anything other than essentially a sheet or film of barrier material that is capable of acting as a tire innerliner, it being considered that the disclosure of a film material and especially a high oxygen barrier material in the reference would anticipate or in any event certainly render obvious an innerliner as claimed. As to claim 3, note for example col. 6, lines 16-18. As to claim 4, the different temperatures and humidity used make a direct comparison with the disclosed values in the reference (col. 11, lines 37-46) difficult. The suggestion that the material has an extremely low oxygen transmission rate (col. 1), coupled with the fact that it is also an EVOH based material, is considered to provide sufficient evidence to expect that the claimed upper limit would be implicit or obvious from this disclosure. As to claim 5, given the catalyzed reaction with the epoxidized additive, it would not seem unreasonable to term this a cross-linked material. As to claim 6, note col. 11, lines 27+ and the examples. As to claim 7-8, various other adjacent layers including adhesive layers and layers that can include thermoplastic elastomer may be provided - e.g. note col. 10, lines 37+.

JP '448 (a translation of this reference was provided by applicant on 4-24-2006) discloses a high oxygen barrier film material formed by reacting EVOH, having preferably 25-70 mol % ethylene (page 5 of translation) and examples of 25% and 40% (page 20), with for example 5% of an epoxy compound (e.g. glycidyl allyl ether - pages 21-25 ). Although the reference does not describe "an innerliner for pneumatic tires", it is not seen that this clearly defines anything other than essentially a sheet or film of barrier material that is capable of acting as a tire innerliner, it being considered that the

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disclosure of a film material and especially a high oxygen barrier material in the reference would anticipate or in any event certainly render obvious an innerliner as claimed. As to claim 3, note for example examples A-1 and A-2 on page 20. As to claim 4, the different temperatures and humidity used make a direct comparison with the disclosed values in the reference difficult. The suggestion that the material has an excellent oxygen barrier property (and the fact that it is also an EVOH based material with amounts of ethylene and saponification consistent with that claimed) is however considered to provide sufficient evidence to expect that the claimed upper limit would be implicit or obvious from this disclosure. As to claim 5, note the paragraph spanning pages 15-16. As to claim 6, exemplary film thickness of 30 and 5 microns are suggested (pages 21 and 25). As to claim 7-8, various other adjacent layers including adhesive layers and layers that can include thermoplastic elastomer may be provided - e.g. note esp. page 15.

9. Claims 1 and 3-6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 3-88837 (newly cited) or JP 7-331020 (newly cited).

JP '837 and JP '020 (note abstracts) each disclose high gas/oxygen barrier film materials formed by reacting EVOH having ethylene contents consistent with that claimed with epoxy compounds (note "oxirane ring" in JP '837) at amounts consistent with that claimed to improve the film properties. Although the references do not describe "an innerliner for pneumatic tires", it is not seen that this clearly defines anything other than essentially a sheet or film of barrier material that is capable of acting

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as a tire innerliner, it being considered that the disclosure of a film material and especially a high oxygen barrier material in the references would anticipate or in any event certainly render obvious an innerliner as claimed. As to claim 3, note the abstracts. As to claim 4, the suggestion that the materials have good barrier properties, coupled with the fact that they are (like applicant's material) based upon similar EVOH, is considered to provide sufficient evidence to expect that the claimed upper limit would be implicit or obvious from these disclosures. As to claim 5, given reaction with the epoxy functional materials, it would not seem unreasonable to term this a cross-linked material. As to claim 6, it is not clear if the references are suggesting values as claimed - in any event, values under the claimed upper limit are taken to be typical and obvious routine selections for such film materials.

10. Claims 1, 3-10 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. (US 5,292,590) taken in view of Tsai et al. (US 6,479,160 - newly cited) or JP 63-8448 (of record) or JP 3-88837 (newly cited) or JP 7-331020 (newly cited).

Lin et al. discloses an innerliner and tire with this innerliner formed from an ethylene vinyl alcohol copolymer that preferably contains less than 50% ethylene content and is more than 90% saponified (esp. col. 2, lines 53-63). Modification with an epoxy compound as claimed is not however taught.

The secondary references, as described above, each disclose reacting an EVOH based barrier film material consistent with that of Lin et al. with an epoxy compound to improve various film properties. In light of these teachings, it is considered to have

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been obvious to replace the unmodified EVOH in Lin et al. with a modified EVOH as taught by any one of the secondary references with an expectation of predictably improving film properties while maintaining the good barrier properties. An innerliner and tire as required by claims 1, 3-5 and 15 is therefore considered to have been obvious. As to claims 6-8, 14, 16 and 17, Lin et al. discloses use of auxiliary layers (that can be different - note col. 5, lines 5-8) as well as adhesives (col. 4, lines 6-8) and thicknesses (e.g. col. 8, lines 28-30) consistent with those claimed. As to claims 9-10, Lin et al. indicates that any conventional rubber can be used for the auxiliary layer (esp. col. 5, lines 3-19), it being considered to have been obvious to use butyl or halobutyl given the well known and well recognized fact that such materials have desirable low permeability while having known bonding capability to the carcass (being that such represents the standard and typical tire innerliner rubbers as is well known).

11. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. (US 5,292,590) taken in view of Lin et al. (US 5,292,590) taken in view of Tsai et al. (US 6,479,160 - newly cited) or JP 63-8448 (of record) or JP 3-88837 (newly cited) or JP 7-331020 (newly cited) as applied above, and further in view of at least one of [Liu et al. (US 5,280,817) and Weston et al. (US 5,879,488)].

These secondary references are substantively applied for the same reasons as set forth in the last office action.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

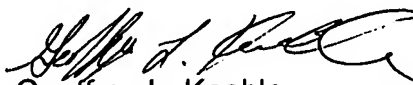


Dunion, Jr. (US 3,542,902), Sharkey (US 2,434,179) and Anzawa et al. (US 4,619,849 - note col. 4, lines 30-36) also disclose reacting ethylenè vinyl alcohol copolymer with an epoxy compound but are no more relevant at present than the applied prior art.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey L. Knable whose telephone number is 571-272-1220. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Geoffrey L. Knable  
Primary Examiner  
Art Unit 1733

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9/3/2007